

# Sustainable development and profitability in the Finnish restaurant industry

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## Sustainable development and profitability in the Finnish restaurant industry

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Environmental sustainability in the food industry is often concerned with the provision of organic products and recycling. The emphasis on organically produced supplies though viewed as an environmentally sustainable means of food production to meet the ends of the green revolution should not obscure consideration of profitability in the business. Making profit is a business goal, while environmental sustainability is an ethical issue whose practice is subject to the balancing act of being profitable and still promoting the values of environmental sustainability.

This thesis will analyze the challenges of profit making within an environmentally conscious business model in the case of Finnish restaurants in the Helsinki metropolitan area. The thesis answers the fundamental question of to what extent particular restaurants practice environmental sustainability (green business) while looking to cut cost and make profit. I have answered this question at the end of a rigorous research study carried out in support of my hypothesis that profitability stands as the biggest challenge to environmentally friendly practices in the restaurant industry. The target group included a school, a hotel, a fast food and a private owned restaurant. The research area focused on food, waste, water and energy management in the target restaurants.

The study results found that restaurants around the Helsinki metropolitan area are practicing green business by offering local and organic foods as a way of cutting down their food miles, they have set up waste management systems to account and sort out the waste produced during their activities, they are purchasing energy saving equipment's to cut down on energy waste, and they have also started to install water intensive equipment's such as dipper wells used in the kitchens to save water costs. Profit gains from green practices still remain a big challenge which has resulted into restaurants looking at environmental sustainability as a way of reducing cost than making profit.

Key words      profitability, sustainability, challenges, restaurant, industry, environment, analyze, hypothesis, research, ethics, values, balance, business

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## 1 Introduction

Restaurant businesses have long faced issues of business sustainability against profitability in practicing environmental sustainability. Most businesses are known to follow one of the three main approaches to sustainable business namely social, environmental and economic, also known as the three P's. The P's stand for people, planet and profit. It is imperative that businesses invest in cost effective methods of sustainable operation that can eventually lead to dramatically reduced costs and higher business returns. Achieving both environmental sustainability and profitability is an elusive idea influenced by many factors that have long been a subject of research and debate.

The thesis objective considered analyzing the challenges of sustainable development in view of environmental problems associated with food related consumption and restaurant profit motivations. It is recognized that businesses have long neglected their obligation to environmental sustainability and focus too much on profitability. The study was designed to shed more light on the state of environmental efforts being made by food businesses in respect of supporting efforts in environmental sustainable development. There have been persistent questions about business commitment to helping deal with the issue of a green environment by promoting good practices. It is in investigating practices that we can learn more about how far the business players are willing and in practice participating in the cause for a sustainable environment, also considering their profit influence as a factor in them making decisions. The latter tests the hypothesis that profits drive business responsiveness to sound environmental practices. In this mentioned regard the assumption is that business care more about making profit and will disregard or do less for the environment given that the cost or loss leaves them less profitable.

The thesis approach I employed was the qualitative research method, and a questionnaire was made to solicit responses from selected restaurant businesses in the Helsinki metropolitan area. The research target group focused on Hotel food service restaurant, fast food service restaurant, school food service restaurants and private owned public food service restaurant. The scope of research included qualitative analysis of restaurant supply chain and food utilization in respect of environmental preservation goals and green business benchmarks of sustainability such as waste production.

This thesis is going to cover issues of sustainability in relation to the practices in the restaurant business, and ending with a discussion and conclusion of the research carried out in support of the hypothesis on which the thesis is premised. The thesis has nine chapters each addressing distinct topics of sustainability related to restaurant business in the Helsinki metropolitan area. Chapter one serves as the introduction to my paper, giving insight to the thesis

topic and its objectives, Chapter two explores the historical background of sustainability, bringing out interesting history of where it started, Chapter three discusses sustainable development and how different organizations and have authors defined it, Chapter four discusses the environmental challenges in Finland in relation to the Finnish hospitality industry and sustainability in the hospitality operations, Chapter five analyzes the business case of environmental sustainability, Chapter six talks of the research method used in the data collection and the sampling methods used to pick the target group for the research, Chapter seven analyses the results that were collected during the research. Chapter eight discusses the results from the research and Chapter nine reflects on my concluding thoughts on environmental sustainability and profit making in the restaurant business.

## 2 Historical background of sustainability

The modern interpretation of sustainable development, were laid out by a German accountant and mining administrator, Han Carl Von Carlowitz in his book entitled *Sylvicultura Oeconomica* which is believed to have been one of the first publications that coined the term sustainability (Grober, 2010). He argued firmly against short-term financial gains in managing primary resources in general and wood in particular and reasoned to have a plan for reforestation along with the careful harvest of wood (Von Carlowitz, 1713). In 1951 the international union for conservation of nature (IUCN) published the first report on the state of the environment with an aim to reconcile economy and the environment (IUCN, 1951). In relation to the IUCN, Economists Barbara Mary ward (1966) and Ewart Boulding (1966) both had a similar realization in their publications stating that the planet earth is a distinct spaceship, without infinite reservoirs of anything, either for extraction or for pollution, and in which therefore man must find his place in a cyclical ecological system.

In 1972 the Club of Rome an international group of scientists, scholars, and business executives introduced the term 'Sustainable' to the political language in a book entitled *The Limits of Growth*. The book looked at the future as a continuous possibility for further growth and improvement. "Sustainable" was described by the authors of the book as a world system without uncontrollable collapse and material supply to people without shortage (Meadows et al. 1972). In 1987 the most well known definition for sustainable development was created and published in a report titled "Our Common Future" commonly known as the "Brundtland" Report. In the report it was stated that sustainability is the development that's meeting today's needs without shadowing the future from meeting its own development needs. (United Nations 1987) The World Commission first wrote the summarized definition on Environment

Development (WCED) in 1983. In 1991 the United Nation Environment Program (UNEP), the International Union for Conservation of Nature (IUCN), and the World Wide Fund for Nature (WWF) modified the definition with the inclusion of the earth's ecosystem in a report entitled "Caring for the Earth" the report defined sustainable development as bettering the standards of mankind while living in the carrying capacity of the supporting ecosystem.

In 1992 the united nation conference on environment and development included the focus on economic and socio-culture, in what was called Agenda 21. The Agenda stated that the practice of sustainable development needed accepting, developing or improving attitudes by following five principles, the first being taking precautions and not leaving room for risks, second was having social and environmental responsibility in all activities, third was making information transparency to everyone involved, fourth taking up technology ideas to benefit man kind and the fifth was being involved in local, national and global tasks as responsible citizens. (Sloan. et al 2013, 20)

Other conferences on sustainable development followed in the 1990's focusing on the ecological systems where climate change took center stage in Kyoto japan, when 38 industrialized countries agreed on reducing their emissions of greenhouse gasses to of 5.2 percent by the year 2012. The agreement was put into place in 2005 and during the same year a book was published that focused on the economic part entitled "Cannibals with forks" The Triple Bottom Line of the 21st century by John Elkington an author and entrepreneur, looks at the term triple bottom line (TBL), arguing that success cannot be measured without capturing, analyzing and reporting ecological and social performance in respect of financial results of an organization (Elkington. 2005). These issues provide strong bases to push businesses that are non-environmental and sustainability oriented. It is clear the cause for acting in preserving the global ecosystem is just and requires business to act in achieving changes that are progressive and helpful.

The efforts made in the consuming markets in fact go a long way in promoting social justice in many poor countries where consumables are produced by environmentally ill practices. It is this aspect that makes sustainable practices a serious global concern and justifies research to be continuously made in highlighting the practices of businesses in reaching some of the targets set in achieving sustainable balance in environmental impact of consumption as related to supply, business, profits and ethical business models. Since the start of green campaigns some levels of success have been achieved towards sustainable development through these awareness and strategies. It is imperative that data be analyzed is forming a fact based overview of the practices in the hospitality industry but there is still greater need to intensify efforts in making sure progress is being made. It can be pointed out that efforts can only be

successful on a large scale if environmental sustainability is not viewed as a standalone issue but one that is integrated in business interest of profit seeking but with consequential impact in the general social and economic sustainability of many nations around the world (Sloan. et al 2013). In this regard, my thesis had a solid background of theory where the stated hypothesis was premised such that a good research could possibly be carried out and bring out some great insights into the operation of restaurant businesses in respect good practices for the ends of sustainability by minimal and intelligent use of resources for business end.

### 3 Sustainability development

Sustainability is a term in ecology that refers to the potential of the ecosystem to subsist over time (Reboratti. 1999). The economics of business when brought into the equation shifts the focus from that of ecology to the practice of ethical profit seeking and gainful activities that use products derived from nature (environment), which is itself the main focus of sustainability. The aim has long been to include environmental sustainability to govern business gains, mostly through changing the way people consume goods and how they in general frame economics (Baker. 2006, 7).

Many researchers have defined the term sustainable development differently and hold different view on business obligation to this end. Following the definition of sustainability as advanced by the Brundtland commission in the report titled "Our Common Future" written in 1987, Where it points out that sustainability is development that meets today's needs without shadowing the future from meeting its own development needs (United Nations. 1987), formulating a thesis hypothesis and testing it assumptions against practices as researched, forms a valid bases of acquiring useful information about the status of sustainable development in the food industry in Finland, in specific the metropolitan and urban centered where the research results can be extended without serious discrepancy. It would be doing injustice to the research going by points many concern people find themselves agreeing not to agree about. In a nutshell some have accepted Brundtland's definition because it identifies the overarching goals that need to be included in a sustainability assessment (Voght 2010. Dale 2001 & Adams 2001) while others have criticized it, by pointing out its failure to explicitly note the unsustainability of the use of non-renewable resources and for its general disregard of the problem of population growth (Heinberg. 2010, 4). Taylor (2002) But I believe the fundamental statement is actually true in substance. It is appreciated that critics have their



own views and definition by arguing that the future generational, needs may not be the same as today's.

A Global perspective, Some Major world organizations have expanded the Brundtland report statement with caution and defining objectives such as The Organization for Economic Cooperation and Development (OCED) that supports the definition made by the National Strategies for Sustainable Development (2000) that is similar to the Brundtland report but has a narrower base of message and focuses on the economic and social development without the mention of the environment (Mawhinney. 2002, 6). Despite its controversies the Brundtland definition of sustainable development recognizes two essential issues, that are investigated and analyzed in this thesis, one being the environmental degradation as a result of economic growth leading to high demand of the earth's natural resources, and secondly the need to reduce poverty in the society and build shared prosperity for today's population that will continue to meet the needs of the future generation (Douglas. 2007). It's this aspect of sustainability that is brought under scrutiny in my research. The above literature review has shown that sustainable development has many definitions yet one agreeable cause. There is a strong aspect and grave concerns that humanity has in recent times developed tendencies and actions that neglect nature's ability to thrive. Resources are misused and misapplied at alarming rates and quantities in a way that makes future fortunes unpredictable. Vital information and statistics will play a vital role in understanding the best course of action and help policy making. The three pillars of sustainable development that are the main focus areas in most definitions and agreeable in respect of my understanding behind my research are economic sustainability, environmental sustainability and social sustainability (Ekins. 2000). Research focus has here is concentrated on environmental sustainability with secondary look at the social and economic part of the hospitality industry, as the principle of the three pillars states for the complete sustainability problem to be solved all three pillars of sustainability must be sustainable however taking a critical look at the economics of the business in respect of profit motives which have been identified in the hypothesis as a primary cause of neglecting sustainable practices. Figure 1 shows Barton (2000), and Du Plessis (2000), Illustration of the interplay between the above mention primary elements of sustainability model to definition.

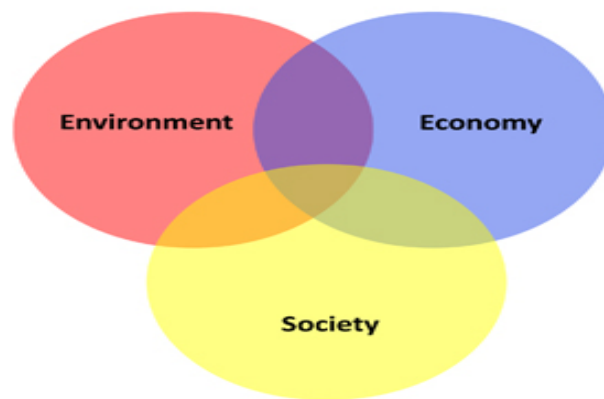


Figure 1: Element interaction of the three primary Influence on sustainable development (Barton 2000 & Du Plessis 2000)

### 3.1 Environmental sustainability

Without dispute, Environmental sustainability has recently been pivoted as a serious issue in almost every sphere of business. It is however imperative to state the specifics of the separate ideas behind accepted definitions, one of which concerns the idea of sustaining the natural processes of resource regeneration and the natural environment which extends to the climate system. The second is addressing of environmental issues in order to maintain social institutions (Meadowcroft, 1999). Carlo vezzoli and Ezio manzini (2008) define the term environmental sustainability as a systemic condition were either on a planetary or on a regional level human activities disturb the natural cycles, the planetary resilience allows. At same time, there is a need not to impoverish the natural capital that has to be shared with the future generations.

There are many reasons to insure that Businesses adhere to practices that support achieving the goals stated above and many similar Arguments. Daly (1973, 1974, 1992, 1996, and 1999) and Daly and Cobb (1989) have also defined environmental sustainability using the output rule and the input rule:

Output rule: waste emission from a project or action being considered should be kept within the assimilative capacity of the local environment, without unacceptable degradation of its future waste absorptive capacity or other important services.

Input rule: Renewable resources: (e.g., forest and fish) harvest rates of renewable resource input must not surpass the regenerative quantity of the natural system that generates them.

Non-renewables: depletion rates of non-renewable resources input should be set below the historical rates at which renewable substitute were developed by human invention and investment according to the serafian quasi-sustainability rule.

It is not by accident that Environmental sustainability is presently a topic that receives a lot of attention from businesses and government agencies. Even though the long-term implication of sustainability is not yet fully understood, there is plenty of research being put into assessing the impact of the human activities towards the environment. Business organizations are being put in the forefront to lead in environmental sustainability practices as they are considered to be the highest contributors to the environmental degradation and resources misuse. Business practices have been pointed out as a great influence that impact environmental sustainability and business actions stand a good chance to make a significant difference in general.

Finding ways of practicing business oriented to minimizing negative environmental ought to be very business's duty in respect of any profit motivation. Business responsibility can be measured by evaluating a business's operation practices in regards to the environmental footprint. This means that waste, consumption of raw materials and related negative effects that can be calculated must be examined in detail to ascertain how far the business is applying measures to minimize negative impact in the food process in the case of a restaurant. There is a lot of information about decision making in a business that can help deduce that commitment to environmental sustainability. The end goal is to influence the reduction and negative impacts on the environment in order to formulate a development process that will make a business become better sustainable. It can be pointed out that the Restaurant/hospitality business operations have in particular great areas of impact on the environment, such as its manufactured product demand, food production impact, waste production, water, and energy demands etc. What we would want from these businesses is practices that will promote environmental sustainability by reducing negative practices that may affect the environment now, or in future (Sloan, p. Legrand, w and j, Chen, 2013, 25). The main areas we can expect to receive positive change should include resource efficiency, energy efficiencies and sustainable product consumption, waste minimization and management, water conservation, biodiversity protection and enhancement. This might include local purchasing and sustainable transport. (Cornwall and the Isles of Scilly. 2000-2006)

### 3.2 Economic sustainability

There is a strong correlation between profitability and Economic sustainability. The modern concept underlying economic sustainability seeks to maximize the flow of income that could

be generated while at least maintaining the stock of assets or capital (Maler, 1990 & Solow, 1906). This reality plays into the business models business owners adopt in their daily business practices. Fisher (1906) defined 'capital as a stock of instruments exists at an instant of time as a stream of services flows from this stock of wealth'; Hicks (1946) argued that people's maximum sustainability consumption is the amount that they can consume without impoverishing themselves. Some restaurant Business owners have noticed that environmental sustainability practices can provide short and long term business benefits and may increase internal profitability by saving costs through using energy and water efficient technologies and equipment's. They have also noticed that through the sustainable management system their stakeholder relationships improve, they enhance public relation, increased market share, and improved staff moral and motivation. The case for economic sustainability in this respect is to support and develop the local economy and generate monetary benefits for people through increased employment opportunities, business linkages and other income-generating opportunities (Sloan, et al 2013, 26). But this is not always an easy choice to make considering desires of profit margins and cost related to green practices as sustainability is also known.

### 3.3 Social responsibility

Social responsibility by businesses is a central theme in environmental sustainability as it is seen as a commitment to preserving the future of communities well balanced need for business and environmental sustainability put together. Ekins (2000) described social sustainability as the promotion of a sustainable society, which can be understood as a society's ability to maintain the necessary means of wealth creation to reproduce itself and have a shared sense of social purposes to foster social integration and cohesion. The above description so far argued, offers a clear research perspective to investigate business operations considering these well founded descriptions of sustainability. The end of calls to sustainable practices is also clear even in when it raises debates from time to time, such as the one at the UN conference in Istanbul 1996 that argued whether social sustainability meant the social preconditions for sustainable development or the need to sustain specific social structures and customs (Sachs, 1999). What is clear however, is that there has to be action being made, to achieve the desired result. The research findings will go a great length to answer the questions on how far the businesses are going in embracing the agenda of sustainable business that factors in environmental problems that are generally associated with business goals of making profit against other important responsibilities that have long been left unattended while the economic system became unsustainable in respect of environmental degradation. Social sustainability in

restaurant businesses can be interpreted in the line of the business's impacts on the society it operates on. It follows then that restaurant operations can contribute to the lives of the local people in present and in the future if their operations can promote sustainable use of resources and influence the supply chain of sustainable products used in their business. A restaurant committed to social sustainability deals with issues of public health, social justice, human rights, labor rights, community issues, equal opportunities, skills and education, workplace safety and working conditions. The above can also include maintaining and promoting social and cultural diversity, involving communities, consulting stakeholders and the public as well as training its employees about sustainable practices (Sloan, et al 2013, 26). It can be pointed out that restaurants have a role to play in influencing what products find their way on their menus and its production history should be within the context of sustainability. For example in Japan, there is a strong demand for certain foods that are not sustainable in practice. An example in specific is the shark soups that result in shark killing to the extent of endangering the species. It will be important to find out if restaurants are promoting such kind of behavior by being indifferent to the impact made on the ecosystem by products they offer their customers purely for their popularity and income generating that brings in profits irrespective of the damage done by the means the product is made available.

#### 4 Environmental challenges in Finland

In recent decades, environmental challenges such as air pollution and water pollution have declined in Finland and some of the trends that were once seen as irreversible such as energy consumption and an increase in private car use are starting to show a sign of leveling off. However the environmental challenge being faced by Finland and other Nordic countries is the declining in biodiversity (flora and fauna) due to human activities. The main concern that was presented by the Nordic council of ministers in 2009 highlighted this need to stop further degrading activities such as building facilities near lakes, and new transportation routes that could expose more disturbance to the natural habitats for many species which would potentially result in extinction or change of behavior of species. (The Nordic council of ministers 2009). Over 700 species have been classified as endangered due to the forestry industry in Finland. Finland's largest resource is the forest. It is one of the biggest pulp producers annually in the EU. Much of its wood is used in the production of timber. In the bid to protect and conserve the forest many types of forest species have become rare and the species living in them have become endangered. (Natur och miljö 2010). Factoring in other industries into this equation shows that, the consequences would be unimaginable. It is the reason why every industry needs to do its part in sustaining the environment. Sustainability will require a con-

sented approach from every business player to drastically reduce the many problems that have been developing over many years.

One Area the restaurant businesses can help with reducing environmental degradation is in the area of waste management and energy. Finland has in fact a strong and well developed waste management system and policies that ensure that every business operating in Finland by law must be aware and take responsibility of the impacts of their operations on the environment. Waste must be sorted and processed in an appropriate way that makes recycling the materials easier, they also promote cutting down the use of material in the production process and encourage businesses to adopt effective consumption management. (Finland Environmental Administration, 2010). But it is also known that biologically modified foods and crop products require special treatment if they are not to end up contaminating the environment.

With climate change expected to cause dramatic change in Finland, experts estimate that temperatures could rise up to 7 degrees by the year 2080 while annual precipitation is estimated to increase by 5-40percent. This could lead to snow free winters in the southern of Finland while the north will experience an increase in snow fall and a drop in temperature too. For the good part that requires to be kept going, Finland has a small global greenhouse gas emissions though when measured per capita appear to be high. Finland's 1990 level of reducing emissions that was set as target under the UN Kyoto protocol is proving to be very difficult due to an increase in demand for energy and natural resources, but in this regard to there is a role the restaurant businesses can play. The reusable energy business can partner with restaurants in utilizing waste to produce energy from bio-waste, which can create heat and power (CHP) producing electricity for the local grid, and warm buildings, maybe run industrial processes. A quarter of all energy used in Finland comes from renewable energy sources. A huge amount of this renewable energy is produced from the residuals that come from the paper and pulp industry. Half of the wood used in Finland is used for the production of energy. It will be prudent to see the larger levels of bio waste produced in food business make a substantial share in renewable energy contributions by falling into the main stream management strategy. Figure 2 shows a comparative chart of energy sources between the years 1996 - 2006. It can be seen that fossil fuel still features prominently.

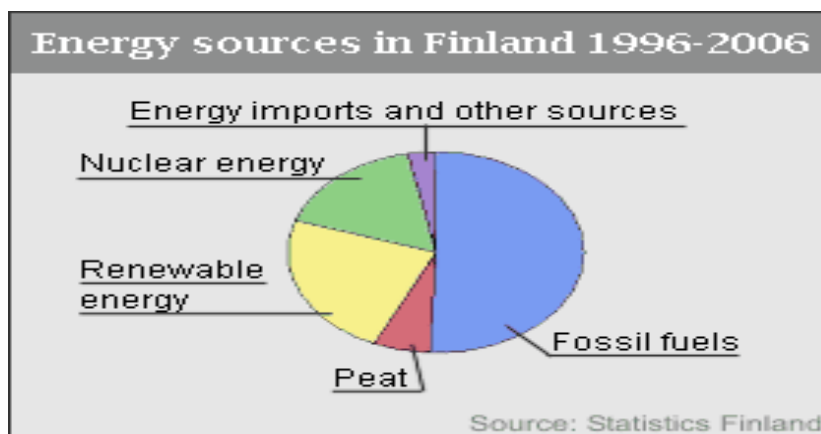


Figure 2: Energy sources in Finland 1996-2006  
(Statistics Finland, 2006)

Finland's energy policies aim being to significantly increase the use of renewable energy sources well is greatly helped by wide measure of sustainability which can be expected to be derived from recycling and waste derived energy. The level of restaurant waste will be measured and factored to get a clear picture of what levels of energy difference that can make. The above statistics are telling in a sense that sustainability advocates have long been pointing out that less use of fossil fuel is a practical indicator of improved effort to sustain the environment, and any efforts that work to reduce the values consumed are welcome as milestones in the quest to champion sustainable green practices. (Jari Iyymäki, 2007)

#### 4.1 Finnish hospitality industry

The Finnish hospitality industry accounts for over 11 percent of people working in the private sectors, it employs over 150,000 professionals. In the years between 1995 and 2012 the hospitality industry in Finland increased its employment levels to 35% while other industries reduced the number of their workforce. It also accounts for 3.8 percent of Finland's GDP which is higher than the banking, insurance or the forest industry. It has a turnover of about 11 billion euros and generates over 5.2 billion in taxation for the Finnish government making up 5.4 percent of the taxes fees collected by the government (MaRa.fi 2014).

Finland ranked top on the world economic forum's "environmental sustainability index" (ESI) since the year 2000 and has been in the lead from 2001 to 2005 reason being the manner used in controlling environmental problems. Clean air, water and solutions are pushed for sustainability using science and technology. Finland's plan which is drawn by a committee of several stakeholders is one of the most eco-efficient, and expected to be among the best countries in the world by the year 2025. The plan has looked at addressing sustainable consumption and production in respect to businesses such as hotels, tourism and restaurants. To achieve this plan Finland's raw materials and natural resources are being used carefully and the production chains are being advised to use renewable resources as their main priority. Finland is

among the first countries to address these environmental issues (Finland environmental administration 2010) whose adherence will be evaluated in research findings here.

#### 4.2 Sustainability in hospitality operations

Understand the concept of sustainability in the context of restaurant operation follows much of the understanding borrowed from expert's reports and acceptable definition through work of many environmental advocates and organizations. Considering the resources that impact on economic profit, society and the environment, examining the principles of sustainability and how they can be incorporated into a hospitality management system is a great starting point, knowing the meaning of the definition like 'meeting today's needs while protecting and developing the opportunities for the future. (Sloan, 2013), helps set the measures to be taken. Sustainable hospitality can be said to aim at reducing the environmental, social and economic impact. The American association, Green Hotels in a more resource oriented definition stated that 'green hotels are environmentally sustainable properties whose managers are eager to institute programs that save water, save energy and reduce solid waste while saving money to help protect the earth.' (Green hotel, 2013) The above definition offers good points of formulating measurement targets one can use in researching my thesis topic, by asking similar question and restaurant management in the Helsinki area. The hospitality industry has a significant impact on the environment through water and energy consumption, food, and waste generation, which create costs for the hospitality service providers resulting in high operation and employee costs. Adopting suitable practices would in fact provide a significant cost reduction and competitive advantage against businesses that opt to neglect sustainable business practices in the sense of environmental support.

Associations that deal in hospitality management have been putting a lot of focus in providing guidelines to ways the industry can take up sustainable practices. Examples of such type of Associations are the International Tourism Partnership which made a set of sustainable hotel sitting, design and construction principles, the American National Restaurant Association which has focused in setting guidelines that drive the restaurant industry towards more environmentally sound practices, and sustainable initiatives, The Finnish hospitality association MaRa also in this regard encourages its members to deliver most of their services in a sustainable way that consider environmental and social aspects, The international Hotel & restaurant Association (IH&RA) a leading business association for the restaurant industry in the U.S currently recommends a set of ecological, business-smart solution after realizing the need for more sustainable practices. Its practices promote conservation of energy, water and other natural resources, increasing recycling and advising the use of sustainable materials and any other alternative energy sources. Another American association that has been championing a mission to create an ecologically sustainable restaurant industry that can serve as a model to



emulate even in the Finnish industry is the Green Restaurant Association which conducts various researches on the environment and has established several guidelines for the restaurants to archive environmental sustainability. An example of this is a Guide of endorsed products, recommending the use of environmentally responsible products in the restaurant industry. They provide information on organic certified, recycled, chlorine free and other environmental preferable products choices. These examples show the growth of sustainability awareness in the hospitality industry. This element will be critical to investigate and dissect the apart of restaurant owner's awareness or adherence in attempting to follow through sustainable practices.

## 5 The business case of environmental sustainability

Businesses that have moved to the direction of sustainability have witnessed tremendous benefits such as; Cost savings, by using fewer raw materials or reusing the material, using less energy and less water, creating less waste and reducing transportation distance. These measures can potentially save a lot on operational and administrative costs. Sustainable branding of restaurants has been shown in many studies to increased customer loyalty and appeal. Customers today are more concerned about the environmental impact of their consumption choices and many have responded to the challenge of changing their buying habits to reduce the impacts. Increasingly, many customers have become interested in buying from businesses that have good reputation and well known inclination to sustainable environmental commitment. Thus by being environmentally sustainable practitioners, businesses get to attract new customers and keep the old customers, in turn growing a respectable market share. It has also been observed that the interest in green company's as great places of work have increased employee attraction and retention, most employees today feel safe to work in business that will not expose them to many harmful substances contained in products that are non-environmental friendly. By keeping their employees businesses save the cost associated in rehiring and retraining of new employees.

Innovation and development of new technologies, by businesses going green, through constantly researching on how to do things differently and better in order to reduce their impacts on the environment have been increasing in many competitive markets. Innovativeness has lead to environmental and cost saving and increase in productivity. Businesses that value to research on how to improve their customer's environmental footprint through their services and products have been driven to development of new and greener methods of service

which has increased profitability as opposed to the idea that many businesses assume such investment to be a cost. The ability to develop, environmental sustainability practices creates the ability to physically support the increase in size of a business from the reducing supply and high demands of natural resources. (Wills, 2009)

## 6 The research

Qualitative and quantitative are the two research methods that are mostly used when conducting a research.

The qualitative method of collecting data refers to data that does not involve numeric data or data that has not been quantified and is a product of research strategies. This is data that is collected from an open questionnaire submitted online or through organizations and public interviews. The sample groups for qualitative research method are small and flexible allowing the respondents to describe their experiences in their own ways. The objective is to analyze the data and understanding the meanings collected from the interviews which help in developing the theory from the data. The analyzed data can be presented in words, pictures and objects but cannot be presented in numeric form. (Saunders, Lewis, Thornhill. 2009, 480)

The Quantitative method of collecting data can range from occurrence frequency to data such as test scores, prices or rental cost. It is a structured research method and requires a large sample group. The research can be conducted through personal interviews or phone interviews with questions that have fixed responses. (Saunders, et al. 2009, 414).

### 6.1 Research methods

The qualitative method was used to collect data in this research. The motivation to use this approach was of its flexibility and its allowance to a greater spontaneity and adaption between the researcher and the study respondent's interaction. Qualitative methods let the researcher be able to design open-ended questionnaires that are not necessarily worded in the

same way with each respondent, this allows the respondents to be free and respond in their own words. ( Qualitative research methods module. 2002) which, in this case, give a clear description of restaurants involvement in environmental practices and if the practices result to profit gains.

In addition, the qualitative methods relationship between the researcher and the respondents is mostly less formal than the quantitative method, the respondents are able to explain more on their answers which help the researcher to have the chance to respond immediately to what the respondents say by tailoring subsequent questions to information the respondents have provided.

## 6.2 Questionnaire design

Good planning is required in creating an accurate informative questionnaire. Knowing what to ask helps to get what we need. The method used to gain information in this research was an open-ended questionnaire that was subjected to the respondents during face to face and phone interviews.

A face-to-face interview was selected to get full answer descriptions and explanations from the respondents and allowing some to show how they practice their environmental sustainability. The Face to face takes advantage of other methods by social cues such as voice intonation and body language. The respondents are able to give extra information that can be added to verbal answers. ( Opdenakker 2006 )

## 6.3 Selecting the sample group

The sampling techniques can be divided into two types, probability, and non-probability. Probability sampling is a technique that has a high chance or probability of samples that are known and equal for all cases. Which means questions can be answered and objectives can be achieved by estimating statistically the characteristics of the sample group, However for non-probability sampling the probability of each case selected from the sample group is not known and it's impossible to answer questions that require statistical inferences about the characteristics of the sample group.

In qualitative research a sample group is required for a given study, the study's research objectives and the characteristics of the research determine the size to select. (Saunders M, et al. 212)

The non-probability technique was considered to select the sample group and the Sampling method used were the purposive and quota methods of sampling, which are the most common sampling strategies in a qualitative research. The selections of groups or participants were selected according to their relevance to the research question.

The main research target group was school, hotel, fast food and private owned restaurants businesses around the metropolitan area that practice environmental sustainability to some extent. The method used to select the respondent restaurants have been by searching the web and going directly to the business and finding out the restaurants that are involved with sustainability and have an environmental management system in place. Getting the right person to interview was not easy especially in big hotel restaurants as they have different managers dealing with deferent levels of activities however it was not the case in small restaurants as they had one person in charge of most activities.

#### 6.4 Implementing the research

The respondents were subjected to an open-ended questionnaire during phone and face to face interviews. This method was chosen as to get clear and better responses than using emails or online questions in English, for most of the respondents preferred to be emailed in the Finnish language.

The interview process was completed in the space period of three months due to busy restaurant managers who had no flexible time to be interviewed or take me through their environmental management system; some referred me to their web pages for more information on the subject.

### 7 Research findings according to respective areas of sustainability investigated

The research focus area was directed on divided areas of restaurant operations like food, waste, water and energy. It was established that environmental management system (EMS) which are organized framework of improved environmental performances in organizations are widely used by all the respondents in the research. The restaurants were basically complaint

and subscribed to the city EMS in place. They barely required any in-house policy to this effect, apart from sorting waste. In this regard, the obtaining practices in general used in Finland alike the whole Scandinavian region is the ISO 14001 compliant. Statistically speaking 4 out of 5 restaurants had environmental management process on the waste management end of their business with active plans for waste reduction. The respondent's models corresponding with a Deming cycle standard that most environmental management systems follow of "planning, doing, checking, and acting" model. See figure 3.

The management review of the environmental system (EMS), shown in figure 3 below would be recommended in keeping tabs on practices to ensure the effectiveness of the system despite any internal or external changes and to identify the required changes in maintaining the effectiveness of the environmental management system. (Kane. 2010).

Shown below is the Deming cycle presentation of an ideal environmental management system the process analysis used to assess restaurant practices in meeting environmental objectives.

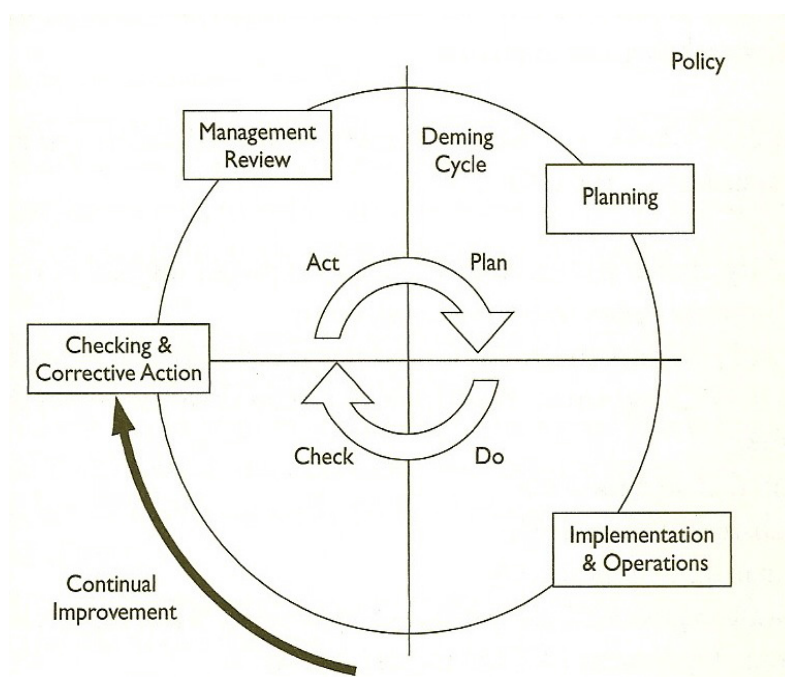


Figure 3: Deming cycle. the "plan, do, check, act" model (Kane 2010, 47)

It would be important to mention that there are many strategies that can be adopted, many of which are certified for use in the hospitality industry business, these include; The environmental management and audit systems (EMAS) which is an environmental management system that focuses on organizations and businesses in the EU, The Earth check by EC3 global is one of the largest certification in the travel and tourism industry but has no business certified in Finland (EC3 global.2010). Green globe certification, which is similar to the Earth check, is mainly tailored for the tourism and hospitality industry. Green tourism of Finland, an organi-

zation made for the Finnish tourism company within the restaurant business, focusses on social, cultural and ecological sustainable development, which has helped many restaurants to keep up with technologies and trends. The Nordic Ecolabel formally known as the Swan label is the most popular unified certificate that looks into the measures of sustainability of different products and services including the hospitality industry players like hotels and restaurant business who have shown soon influence on practices. There are not too many small restaurants with the swan label, unfortunately. It can be pointed out that these references can be helpful in deriving alternative strategies, but the initiatives are not well followed by smaller businesses, in comparison to Hotels and bigger restaurants. Not only does the Swan label help with environmental goals but it also helps as a marketing tool for business competitive advantage, and competitiveness was not seen to have been driving and motivation for environmental sustainability in most of the businesses, especially smaller ones. It can be pointed out those benefits such as a hotel acquiring a Swan label by meeting the set limit value for energy consumption, water consumption and chemical products or waste management and the use of renewable energy sources. (Ecoleballing, 2010), would help the Local industry by motivating Excellency in service to appeal even more to customers.

## 7.1 Food

Food is the most important ingredient of a restaurant and a high percent of energy, water and waste are used in food production in this regard. The questions that arise in most environmental sustainable restaurants are what constitute sustainable food. It follows that suppliers of the food have to be identified. But before we go any further in defining organic foods and the environmental appeal that they present both to consumers and mitigating the issues of environment degradation, it would be helpful to look at ideas from other countries.

For example the United Kingdom government for sustainable development commission defined sustainable food as that which is safe, nutritious, healthy, and meets the needs of the people to the extent that is reproducible in the long run without negative environmental consequences. They also defined it as food that respects biophysical environment limits in its production and processing while reducing energy demands and improving the wider environment. It can be seen as observed from the data gathered in my research that restaurants in the Finnish industry are going to a great length in adopting environmentally sound practices. A hotel food restaurant such as Scandic, in Particular, has recorded an impressive turnaround of fortune with measures that have seen their business becoming more profitable. This demonstrates that the practice conservative environmental practices have great benefit to a restaurant.

The restaurant managers have found Sustainable food to be good for the restaurant business and have also proved to be good for the environment and society as well. Restaurants are able to maintain competitive advantage by Educating and retaining their customers by ways of telling them where the ingredients on their menu come from, Staff pride and loyalty is also increased by training the staff about the origin and quality of food and also Incorporating local, and seasonal food on restaurant menus, which can turn sustainability into a unique selling point and making clear the businesses commitment to improve its environmental performance.

There has been an increase in the demand for ethical food such as organically grown vegetables and many forms of popular trade products. Surveys comprising organic food consumption in the EU countries have found little difference in what motivates consumers to buy organic foods or local food. Some of the reasons for the demands are affordability and availability of the supply which accounts for 30 percent of the demand, 10 percent from environmental concerns, and the health aspect is the main driver accounting for 60 percent of all cases of purchasing organic food. The Organic food production act of 1990 states for a product to be organic it must be produced through organic methods of using renewable resources, must not be produced with antibiotics or growth hormones for animals and must not contain conventional pesticides.(organic food production act,1990). The act also introduced the labeling of organic products making it easy for consumers to know what is organic and what is not.

In the past 20 years, certifications and standards for organic food production have been developed and more than 60 governments have already codified organic standards into technical regulation (IFOAM, 2008). The United States department of agriculture (USDA) for example has formed a set of standards for food handling organizations that sell organically produced foods (USDA, 2008). The European Union has also stated that all organic products must be certified by an approved organization such as the Soil Association that is based in the UK, KRAV based in Sweden and also the Australian certified organic. These national standards assure consumers that 'the organic foods they purchase are produced, processed and certified to be consistent with national organic standards' (USDA, 2008).

Food production standards are set up by multitudes of association and institutions but, however, most countries have a government body that defines the required standards. Many countries have made national rules and regulations for farmers and food processors in terms of production, processing and labelling such as the European Union Council Regulation (EC) No.834/2007 and the United States Department of Agriculture's National Organic Program (USDA NOP). The EU has defined organic food production as: 'an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method that is in line with the preference of certain consumers for products produced using natural substances and processes. the organic production method

that plays a dual social role, where it on one hand provides for a specific market responding to a consumer demand for organic products, and on the other hand deliver public goods contributing to the protection of the environment and animal welfare as well as to rural development' (Council regulation EC 834/2007, 1)

Restaurants in the Helsinki metropolitan area have seen the demand for organic food rising largely reason being consumers believe it's healthier and has more nutrients, it's safer by being grown with fewer chemicals, and that organic food tastes better and most importantly organic farming is better for the environment.

The table below shows Finland's organic food sales rising by more than 50 percent year on year in 2012

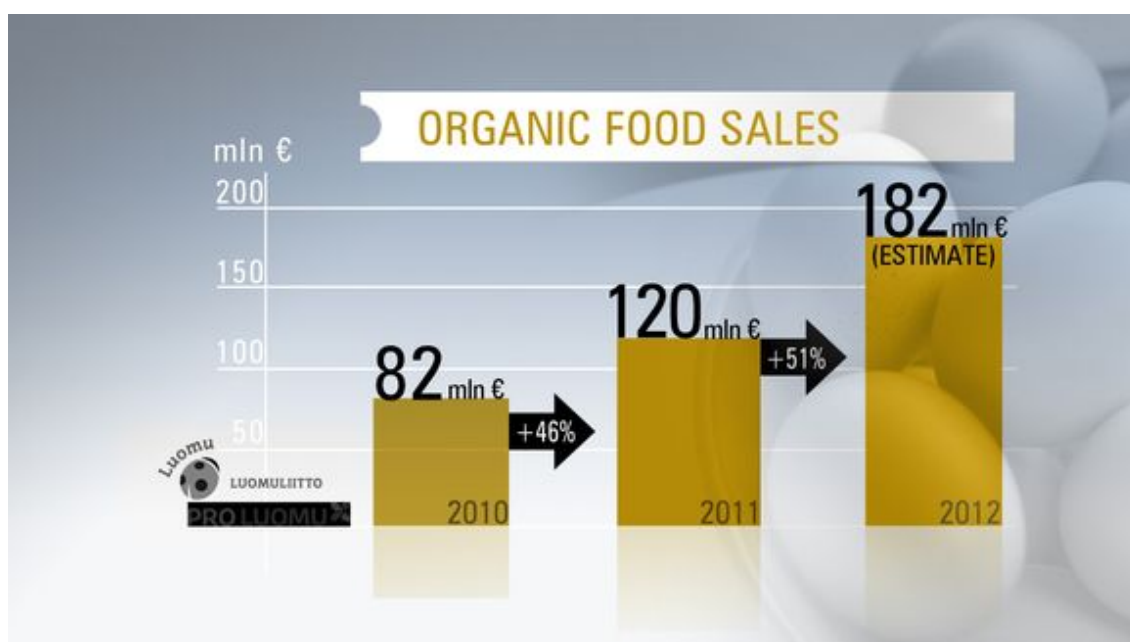


Figure 4: Organic food sales (Yle Uutisgraafika. 2012)

EU and the US rules and regulations are slightly different even though they both account for 90 percent of the global market for organic food; they both provide good examples of the universal definition of organic food, differentiating it from conventional food. The understanding is that for food to be organic, synthetic plant protection agents and mineral nitrogen fertilizers should not be added, organic food should not contain genetically modified organism and antibiotic should not be used in livestock farming, however, organic food can't be said to be more safer than local food (Spangler, Brandeau, Hunter, Bavinger, Pearson & Stave, 2012) as it turns out that organic food has essentially the same nutritional content as locally farmed food (Dangour, Doddhia, Hayter, Allen & Uauy, 2009). It is also not true it has no carbon footprint as the miles that organic food may travel in order to reach its destination may generate pollution from travel which will make it less environmental friendly. (Mays, 2012)



Food is considered local if it is produced within 50 to 150 miles. Based on the food miles, some people have argued that it is more environmental sustainable to buy local food rather than organic food. The growing understanding of the connection of local food to sustainable development are, the reduction of traffic and carbon emissions, maintaining economical activities and giving jobs to the local people, environmental protection and landscape care, increasing of regional value chains and fostering regional cultures and rural livelihood.

Food miles is the distance food travels from where it is grown to the place where it is purchased or consumed by the end users (Sustain 2014).

The benefits of local food to consumers are: faster access to fresh seasonal produce from nearby farms without causing any negative impacts from food miles, more diverse in food farming as farmers can choose independently what they plan on growing, better prices for seasonal products, build trust relationships with producers. These trends can be seen to be pursued in the business strategy of many restaurants surveyed. But there are many challenges in this respect of sustainability that affect the choices in Finnish restaurant businesses, such as climate, international menus etc.

## 7.2 Waste

Waste is any unwanted material substances, it consists of unwanted leftovers be it from a restaurant, household activities, manufacturing process in an industrial, commercial or agricultural process. This unwanted material can be discarded or accumulated, stored, treated prior to being discarded or recycled. Waste can also be described as something that is used inefficiently or inappropriately. (EPA, 1990)

The way waste is disposed can cause serious environmental impacts such as causing smells and generating methane gas by burying waste in dump up holes into the ground which contributes to the greenhouse gas effect, disposing of contaminated water and toxic substances to the environment may lead to surface water, aquifers, soil and air to be polluted and being harmful to humans and other species in the ecosystem.

The food service industry can be considered as an important factor in the reduction of waste that is being disposed at landfill sites by being active in the creation of recycling programs and centers, using environmental friendly cleaning supplies and techniques and sourcing locally produced goods and services that reduce transportation expenses. This is because the food service industry number one priority is maintaining high customers satisfaction thus to their high concern that environmental improvements methods do not negatively affect their

customer comfort. traditional definitions of waste management is concentrated on the removal of rubbish from business premises but in the hospitality industry the scope of this definition continues to evolve as most food service operators have begun to embrace the three R's which stand for Reuse, Recycle, and Reduce. The strategy to reduce the newest component of the equation, which means reducing the amount of waste being produced in the first place. (Sloan et al, 2013, 72)

The European Union produces 1.3 billion tons of waste each year and nearly a third of this is food waste from the food service industry. Food and beverage account for a substantial amount of waste which can be defined as pre and post-consumer food waste, packaging, and operating supplies. Pre-consumer waste is the spoiled food and other products from the kitchen that end up in the garbage before the finished menu items are served to the consumer. Post-consumer waste is the leftover waste that remains after the consumer has finished their meal. Packaging waste is the waste that cannot be biodegraded naturally especially plastic that is being used to hold products that are coming into the kitchen or going out. Operating supplies is every material that becomes waste in the food service operation, such as cooking oil and light bulbs. (Marson, 2010)

The most effective way to reduce disposal fees and making a sustainable kitchen that is being done by the research target group is by waste reduction. The food service industry throws away a huge amount of garbage most of which could be avoided. 70 percent of rubbish in the landfill sites is recyclable or composted while 50-70 percent of the weight of a food service operations garbage consists of compostable food items. Food packaging makes up most of the remaining weight of the garbage bins, but account for around 70 percent of the volume of food service trash. Today a food service operator without any recycling, composting or any waste reduction program can reduce their disposal cost by at least half if they implement simply structured practices such as Rethink, Reduce, Reuse, and Recycle. Examples of how the food service restaurants used in this research have used these methods are, the fast food restaurants have rethought on how to make their packaging more environmental friendly by reducing waste generated in the course of their activities. They no longer use plastic and cardboard boxes. They have started serving their hamburgers in wrapped paper and larger hamburgers come with a supporting cardboard band and have a bio lining to ensure that the biodegradable wrappers are moisture-resistant.

They explain the reason to the process of rethinking encourages the food service industry to consider the ways they use their goods and Rethinking waste production helps businesses reduce the amount of waste and redesign their waste management system. Another example are the school food service restaurants that have used rethinking in the way they save their meals, by going to smaller plates or a trayless cafeteria, which has allowed students not to

take much food and is helping in reducing the post-consumer waste, saving millions of gallons of water and chemicals and less labor costs from the reduction of dirty dishes. Rethinking the way a food service operation takes innovation and the will to allow change. (Sustainable foodservice, 2013)

Conducting a waste audit is the first step used by the target group restaurants in reducing waste. They explain that it allows the waste management team to physically see the amount of waste that is being produced in the restaurant. A waste audit shows how current practices of waste management are affecting the restaurant it shows the management what is being thrown away as waste, what is recyclable or compostable, is the staff well trained to know what kind of waste goes in the trash bins of recycling or compost? After the waste audits, training is an essential part of a successful waste reduction program. Managers in restaurants have integrated waste reduction in the training programs and provide detailed material in suitable languages to their staff; they implement new programs or improve current waste practices by recycling of additional products or replacing plastic disposable goods with durable or compostable options.

Restaurants managers have noticed that the best way to reduce waste is not producing it in the first place. This is called pre-cycling or source reduction. This process allows the managers to choose the right products that come in a restaurant such as products that come with less or no packaging like beers kegs over bottles, bulk items and vendors that packages are reusable. Pre-cycling also means choosing products that are packaged in more recyclable material such as cardboard than unrecyclable plastic, or products shipped in reusable containers. In doing so the restaurant managers prefer buying products from suppliers that are already practicing environmental sustainability and have certification such as the Swan label on their products.

Recycling was found to be the most used process of waste management practices in the targeted restaurants. This was because many items can be recycled besides the standard paper, metal, glass, and plastic. Thus, many restaurants close the loop of waste management by purchasing products that are made with recycled material. Most food service products are produced with recycled content options. The advantage of recycled products compared to virgin materials is that they require less energy and produce fewer greenhouse gasses when being remanufactured to new goods.

### 7.3 Energy

With restaurants being number one electricity users in the retail industry (Green Restaurant Association, 2005) Energy consumption measurement would be a valuable indicator to evaluate the sustainability on the production end. According to the U.S Energy Information Administration, restaurant buildings consume nearly three times the energy compared to an average

commercial building. The restaurants in the thesis research were evaluated on this and found to be consistent with figures from other studies done in the U.S. The breakdown of energy consumption accordingly on average, is shown in figure 5. Quotas of average consumption for cooking equipment's, refrigeration, heating, ventilation and cooling as a whole are shown (HAVC). (Sustainable foodservice, 2013).

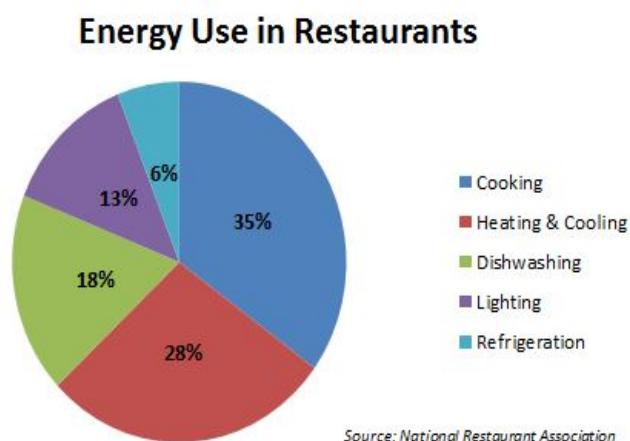


Figure 5: Energy use in restaurants (National Restaurant Association, 2014)

Most of the services provided by restaurants are high resource intensive be it energy, water or raw materials. In the process of using energy in restaurants a certain amount of it ends up being wasted, this leaves enough room to take measures of energy efficiency and conservation techniques that can save energy, water and raw materials (Minnesota Department of Commerce Energy Information Center, 2012).

The private owned and hotel restaurants that were interviewed in this paper have been using gas stoves which have proven to be much more efficient concerning carbon emissions and also if the gas stove uses an electric ignition rather than a pilot light it can reduce energy use up to 40%. Installation of these energy saving techniques helps restaurants to archive environmental progress and gain competitive advantage. Following technological advances many new energy saving equipment's have been introduced to the restaurant industry.

#### 7.4 Water

The processes of cooking, cleaning equipment's, cooling and heating, and restrooms use the highest amount of water in restaurants.

### End Uses of Water in Restaurants

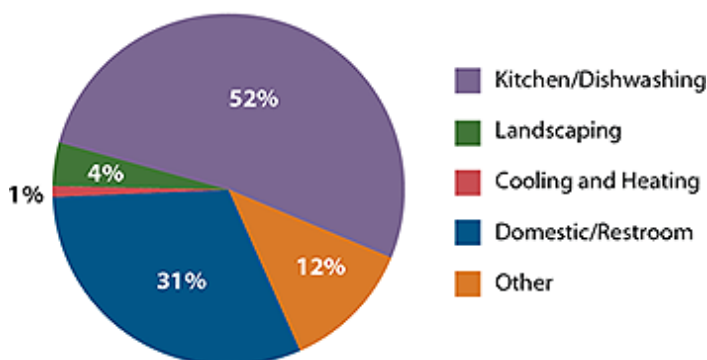


Figure 6: End uses of water in restaurants (New Mexico Office of the State Engineer, American Water Works Association (AWWA), AWWA Research Foundation, and East Bay Municipal Utility District, 2014)

The cost of water and wastewater services has risen in the past 10 years to a rate well above the consumer price index and may continue increasing in order to offset the cost of replacing aging water supply systems. In restaurants, operating costs and environmental impacts are altered by water use. Industry estimates propose that carrying out water-efficient practices in commercial facilities can reduce operating costs, energy costs and water.

Some of the restaurants around the Helsinki metropolitan area are saving energy by reducing the amount of hot water being used in the food service and assessing some of the intensive equipment's that are used in kitchens. This helps in maximizing savings on utility costs. Restaurant businesses can benefit from having water intensive equipment's used in kitchens such as dipper wells and wok stoves, for example, use quite a bit of water due to a continuous flow. If it is necessary to replace existing food service equipment, upgrade equipment's with water efficient models, which will save costs. Restaurant businesses can also benefit from water efficiency measures through increased customer satisfaction. In general consumers have shown a preference for businesses that have made a commitment to reducing their environmental impact. With some customers seeking green restaurants, demonstrating environmental sustainability through water efficiency is a smart way to gain a competitive advantage.

## 8 Discussion

The research pool might not have been as wide as I would have liked, but valuable information was acquired from the sizeable number of respondents in the research. The research method was designed to capture specific information that was meant to either support or disapprove the hypothesis, which postulated that restaurant businesses face a great challenge in profit making while carrying out sustainable practices in respect of their impact on the environment. This has yielded a lot of new insight into restaurant environmental sustainability practices.

Among these findings include the fact that many Hotels restaurant are far advanced in adopting practices that help environmental sustainability, a situation that is not so much on the Agenda in private or public restaurants. This can be somehow attributed to labels and grading of services. While as hotel restaurants strive to appeal for such achievements, the public restaurants have little to press them to go an extra mile, their customers are indifferent to such environmental quality labels and grade.

But in answering the thesis question and hypothesis, whether indeed the motivation of restaurant businesses being involved in good environmental practices is purely maximizing profit at all cost. It was discovered that many restaurant businesses in as much as they worry about the cost implications for profitability to invest effort in sustainable practices, like quitting the serving of certain foods on their menus, actually do respond to the need for compensating and balancing the potential environment problems their business can cause.

It also evident that businesses overstate their commitment to environmental sustainability, they are more under a customer influence to stay in business. There are strong indications that customer response to changes has a big impact on how far businesses are willing to limit harmful practices, which is a business choice as opposed to a moral choice. This shows that business will not support measures aimed at sustainability easily, provided the measures threaten their profitability or financial sustainability. It was not easy, however, to have much access to the numbers to prove if they have been making profit by environmental sustainable practices, the respondents provided estimates and much focus is on cutting costs. There is the need for business statistics to be made public and readily available for evaluation.

## 9 Conclusion

In concluding the findings of the thesis research, it can be stated that profit maximization in the face of environmental challenges has taken a new meaning. The notion of sustainable products like food itself is a business branding for some businesses and a business strategy for yet another set of businesses. In a nutshell, all restaurant businesses agree that there is the need for compliance and ethical consideration in practicing environmental sustainability orientated services to their clients. But the power of the Customers choice is still a big issue for most of the restaurants.

Considering the differences in waste management. Fast food restaurants register minimal waste output as many of their customers take the responsibility to account for waste when they take away the food. However In school restaurants and public restaurants, the trend is that waste levels are higher. School restaurants with meal subsidy are less demanding on exotic foods which can explain why their impact ratio compared to Hotels and public restaurants are less. Their menu is mostly locally based and in most cases plain.

The strategy the research was able to show that, the more profitable a business is, the more willing they were to initiate sustainability programs that cut down a high percentage of cost and may gain profit in the long run. There are equally many signs of the customer preferences strong influence on the choices many restaurants make that might be inconsistent with sustainable practices as an example in this regard, Scandic Hotels restaurant success in quitting the use of palm oil, showed that customers were willing to accept offers of new ways their food was prepared without substantial losses in the interest in a product provided there was a good substitute to do the same purposeful function. It would, however, require a separate investigation into restaurant customer's response to sustainability-driven changes to their favorite menu and dishes served at restaurants.

It is this regard that working on a hypothesis that profitability stands as a biggest challenge to environmentally sustainable practices in the restaurant industry was tested and evaluated based on the information obtained by qualitative research made by means of an interview questionnaires. The research focus was placed on stocking and utilization of acquired food supplies, and their production sources to help evaluate the share quantities of environmentally sustainable food served in the target restaurants. A profitability relationship between practices that advance ethical considerations to help developing a sustainable chain is thereafter assessed.

Many restaurant businesses have spread their sustainability efforts to the operations of their customers and suppliers, by devising processes and attractive offers that creates new business models that shift consumer preferences to support green business and green trends centered on marketing new food paradigms. These businesses have demonstrated that trade-offs between profitability and environmental sustainability are the cornerstone of successful shift from wasteful business to a all new model of promoting not only sustainability but opening up new opportunities for product manufacturers and food producers.



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## Figures

Figure 1 Element interaction of the three primary Influence on sustainable development

Figure 2 Energy sources in Finland 1996-2006

Figure 3 Deming cycle. the "plan, do, check, act" model

Figure 4 Organic food sales

Figure 5 Energy use in restaurants

Figure 6 End uses of water in restaurants

## Appendixes

### Thesis research questionnaire

#### General Interest

1. What type of restaurant is this?
2. What kinds of meals are served at the restaurant?
3. What is the capacity of the restaurant? (Number of sits)
4. What are the restaurant's goals? (Short and long-terms)
5. What are the environmental goals?
6. What are the driving forces to the restaurants environmental goals?
7. What are the steps that the restaurant is taking towards reaching environmental goals?
8. Is the restaurant sustainable or environmentally friendly? What are the ways of doing this?
9. Have the efforts helped the restaurant?
10. Who is the restaurant target clientele?
11. Does the restaurant compost its food waste?
12. Does the restaurant recycle?
13. How is recycling done?
14. Are there any barriers in recycling at the restaurant?
15. Do you monitor and measure how recycling is done?
16. How does recycling help the restaurant?

#### Environmental

1. What are the environmental impacts of the restaurant? Has the restaurant purchased energy efficient appliances for the restaurant?
2. What brands of appliances are currently being used? If you do not have energy or water efficient appliances and fixtures, what is the reason?
3. Does the restaurant have a waste reduction program?
4. Do you know what percent of your purchases are for local/organic food?
5. Has the restaurant installed low-flow water fixtures in the kitchen and bathrooms?
6. Do you know how much food waste is produced per day/per week/per month? Do you have any data that you can share?

#### Economic

1. In general, what are your biggest costs and investment requirements?
2. Does the restaurant track the costs (energy costs, food procurement and waste removal)?
3. What types of changes in operations have occurred in the recent years due to environmental practices?

#### Social

1. What are the biggest social impacts of the restaurant?
2. Have you engaged your customers to get their opinion on environmental practices that the restaurant is dealing with?
3. Do you think that restaurants have a role to play in community development and outreach?

#### Sustainability

1. In your own words define "sustainability." Do you think "sustainability" applies to restaurants?
2. Are there aspects of what you consider "sustainable" that you think are particularly difficult to achieve in a restaurant? Why?
3. What are the aspects of sustainability that are easy to achieve in a restaurant that would provide a demonstrable benefit in profit making.